

What is claimed is:

1 1. A heat sink assembly comprising:  
2       a heat conduit; and  
3       a block formed of a thermally conductive material having a first thermal  
4 conductivity,  
5       the heat conduit extending through a substantial portion of the block,  
6       the heat conduit having a second thermal conductivity greater than the first  
7 thermal conductivity.

1 2. The heat sink assembly of claim 1, wherein the first thermal conductivity is  
2 greater than or equal to about 10.

1 3. The heat sink assembly of claim 2, wherein the first thermal conductivity is less  
2 than or equal to about 100.

1 4. The heat sink assembly of claim 1, wherein the heat conduit is adapted to transfer  
2 heat from a heat source along its length.

1 5. The heat sink assembly of claim 4, wherein the block is adapted to transfer heat  
2 away from the heat conduit.

1 6. The heat sink assembly of claim 1, wherein the block has a first segment on one  
2 side of a portion of the heat conduit, and the block has a second segment on another side  
3 of the portion of the heat conduit,  
4       the first segment having a first heat conduction distance to dissipate heat from the  
5 heat conduit, and the second segment having a second heat conduction distance to  
6 dissipate heat from the heat conduit.

1 7. The heat sink assembly of claim 6, wherein the first and second heat conduction  
2 distances are substantially the same.

1       8.     The heat sink assembly of claim 7, further comprising a second heat conduit  
2     extending through another substantial portion of the block.

1       9.     The heat sink assembly of claim 8, wherein the block has a third segment on one  
2     side of a portion of the second heat conduit, and the block has a fourth segment on  
3     another side of the portion of the second heat conduit,

4              the third segment having a third heat conduction distance to dissipate heat from  
5     the second heat conduit, and the fourth segment having a fourth heat conduction distance  
6     to dissipate heat from the second heat conduit.

1       10.    The heat sink assembly of claim 9, wherein each of the first, second, third, and  
2     fourth segments have airflow channels extending therethrough.

1       11.    The heat sink assembly of claim 5, wherein the block has airflow channels to  
2     provide surfaces on the block exposed to airflow.

1       12.    The heat sink assembly of claim 1, wherein the thermally conductive material  
2     comprises a non-metallic material.

1       13.    The heat sink assembly of claim 1, wherein the thermally conductive material  
2     comprises a thermally conductive polymer.

1       14.    The heat sink assembly of claim 13, wherein the heat conduit comprises a heat  
2     pipe.

1       15.    The heat sink assembly of claim 13, wherein the heat conduit comprises a tubular  
2     structure having a bore through which fluid is adapted to flow to transfer heat.

1       16.    The heat sink assembly of claim 1, further comprising plural other heat conduits  
2     extending through respective substantial portions of the block.

1    17.    The heat sink assembly of claim 1, wherein the heat conduit has a first portion and  
2    a second portion angled with respect to the first portion, the first portion adapted to  
3    contact a surface of a heat source.

1    18.    The heat sink assembly of claim 17, wherein the block has a vertical axis and a  
2    horizontal plane formed by two axes, the first portion of the heat conduit extending  
3    generally along the horizontal plane, and the second portion of the heat conduit extending  
4    generally along the vertical axis.

1    19.    The heat sink assembly of claim 18, wherein the second portion has a shape  
2    selected from the group consisting of: generally straight, generally S-shaped, and shaped  
3    as a loop.

1    20.    The heat sink assembly of claim 18, further comprising a second heat conduit  
2    extending through another portion of the block, the second heat conduit having a first  
3    portion extending generally along the horizontal plane and a second portion extending  
4    generally along the vertical axis.

1    21.    The heat sink assembly of claim 18, wherein the block has a first side edge, the  
2    second portion of the heat conduit a first distance from the first side edge, the first  
3    distance being a heat conduction distance of a first segment of the block, the first segment  
4    of the block to dissipate heat from the heat conduit.

1    22.    The heat sink assembly of 21, further comprising a second heat conduit extending  
2    through another substantial portion of the block, the second heat conduit having a first  
3    portion extending generally along the horizontal axis and a second portion extending  
4    generally along the vertical axis, the block having a second side edge, the second portion  
5    of the second heat conduit a second distance from the second edge, the second distance  
6    being a second heat conduction distance of a second segment of the block, the second  
7    segment to dissipate heat from the second heat conduit.

1    23.    The heat sink assembly of claim 22, wherein the block has airflow channels  
2    through at least the first and second segments.

1    24.    A method of dissipating heat from a component, comprising:  
2         providing a block formed of a thermally conductive material having a first  
3         thermal conductivity; and  
4         extending an elongated heat conduit through a substantial portion of the block, the  
5         elongated heat conduit having a second thermal conductivity greater than the first thermal  
6         conductivity.

1    25.    The method of claim 24, wherein extending the elongated heat conduit comprises  
2         extending a heat pipe.

1    26.    The method of claim 24, wherein providing the block formed of the thermally  
2         conductive material comprises providing the block formed of a thermally conductive  
3         polymer.

1    27.    The method of claim 24, further comprising extending another elongated heat  
2         conduit through another substantial portion of the block.

1    28.    The method of claim 24, further comprising:  
2         providing a first segment of the block on one side of a portion of the elongated  
3         heat conduit to dissipate heat from the elongated heat conduit; and  
4         providing a second segment of the block on another side of the portion of the  
5         elongated heat conduit to dissipate heat from the elongated heat conduit.

1    29.    The method of claim 28, further comprising providing airflow channels through  
2         the first and second segments.

1    30.    The method of claim 29, wherein the block has a horizontal axis and a vertical  
2         axis, the portion of the elongated heat conduit extending generally along the vertical axis.

1       31.     A system comprising:  
2              a component; and  
3              a heat sink thermally contacted to the component,  
4              the heat sink having a block formed of a thermally conductive material, the heat  
5        sink having a first segment and a second segment,  
6              the heat sink further having a heat conduit extending through the block between  
7        the first and second segments, the first segment to transfer heat away from the heat  
8        conduit in a first direction, and the second segment to transfer heat away from the heat  
9        conduit in a second direction.

1       32.     The system of claim 31, wherein the heat conduit comprises a heat pipe.

1       33.     The system of claim 32, wherein the thermally conductive material comprises  
2        thermally conductive polymer.

1       34.     The system of claim 31, wherein the thermally conductive material has a first  
2        thermal conductivity, and the heat conduit has a second thermal conductivity greater than  
3        the first thermal conductivity.

1       35.     The system of claim 34, wherein the first thermal conductivity is in a range  
2        between 10 and 100.

1       36.     The system of claim 31, wherein the heat sink further comprises airflow channels  
2        extending through the first and second segments.

1       37.     The system of claim 31, wherein the block further has a third segment and a  
2        fourth segment, the heat sink further having a second heat conduit extending between the  
3        third and fourth segments.

1    38.    The system of claim 37, wherein the thermally conductive material comprises  
2    thermally conductive polymer.

1    39.    The system of claim , wherein the heat conduits comprise heat pipes.